

During the Great War a number of Germans were interned in the Wellesley Barracks (Old British Infantry Lines) at Ahmednagar.

The Barracks were then surrounded by the usual high barbed wire fence.

In 1921 this fence was dismantled and the materials sent to Bellary for the Moplah Prisoners Camp there. The small fragments of binding wire were left lying on the ground.

In the Autumn of 1923, during the Military reliefs, owing to the incoming regiment arriving some months before the departure of the outgoing one, the Wellesley Barracks had to be temporarily occupied, and when they were being repaired, it was found that the local doves had been making their nests of the wire cuttings. The nest is usually very well and closely woven with considerable integrity, and the birds must have amazing strength of beak to bend the wire.

There is usually a very thin filling of dry grass and down on the inside.

Sixty-seven of these nests were taken out of one Barrack alone.

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POONA,

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10th November 1923.

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Wire is often used in nest construction by crows and kites. There is the classic instance of a pair of crows who built up a home with gold and silver spectacle rims, stolen from a local firm of oculists.—EDS.

NO. XIII.—THE INCUBATION PERIOD OF BULBUL'S EGGS.

There is hardly any definite record regarding the period of incubation for Bulbul's eggs. Field observation in this respect does not exist. Oates, in Hume's "Nests and Eggs" makes no mention of it. Two contributions, however, one by Mr. Teschemaker and the other by Dr. Amsler, in the *Avicultural Magazine* (third series, Vols. I and II,) supply us with aviary notes on this point. But the conclusions therein seem to be vitiated by imperfect records and defective calculation, and I should like to examine the two notes before I put down my own observations.

To fix the incubation period of eggs correctly we should first of all remember one thing. There are some birds—game birds and domestic fowls for example—that lay the full complement of eggs before they begin to sit. But the majority of birds begin to sit as soon as the first egg is laid. It may be that many do not sit as closely on one or two eggs as when the full clutch has been laid. Even in that case some amount of incubation occurs and this has to be taken count of in determining the period of incubation. Those who keep canaries know full well that these birds begin to sit as soon as the first egg is laid. So that those who want to ensure simultaneous birth usually employ dummy eggs until the full clutch is complete.

Two eggs are not laid simultaneously. When one is laid some time must elapse before another appears. If the intervening period be 24 hours, then the incubation of the first egg begins so much earlier. The result naturally is that the first egg hatches out one day ahead of the second and so on. All the chicks do not appear simultaneously; they cannot, simply because their incubation does not begin together. Sometimes, of course, two chicks may be found to have been hatched out on the same day. But in such cases also, there is always a difference of a few hours in their birth which escapes our notice. In determining the period of incubation, one has to count from the date when an egg is laid to the date when that particular one is hatched. Both Dr. Amsler and Mr. Teschemaker suppose that Bulebuls begin incubation with three eggs, as if the birds think one or two eggs too small a number for such an important task!

Of the five broods raised by his Bulbuls (*Otocompsa emeria*), Mr. Teschemaker kept record of one case only. Even in this one case the eggs hatched out—to quote his own words—“in the unusually short period of nine days.” He says, “Once more three eggs were laid and incubation commenced on the 14th July. . . . Two young hatched out on the 23rd.” It may be asked, when were the three eggs laid—how long before “incubation commenced on the 23rd?” Without the dates when each egg was laid, we cannot fix the period of incubation. We do not believe that the eggs hatched out after nine days’ incubation. Even during a heat-wave in India, the eggs of Bulbuls require more than nine days’ incubation. Mr. Teschemaker evidently made some mistake.

Dr. Amsler’s records are more numerous but they are alike inconclusive. His pair of Bulbuls—they too were *Otocompsa emeria*—raised four broods in one season. The periods of incubation were, “fourteen days in the case of the first and last, and ten days in the case of the second and third nests.” From this record we cannot say what is the ‘normal’ period of incubation for Bulbuls’ eggs. Let us examine his records. The very first case would show that his method of calculation was wrong.

“The hen laid her first egg on the 25th (May). She started sitting on three eggs and laid a fourth egg on the 28th. She hatched out her first and only chick on the 9th June. One egg had disappeared, one turned out to be clear and the fourth a dead chick.”

The above statement shows that the bird does not wait for the completion of a clutch before she decides to brood. Dr. Amsler might have noticed it to sit closely on three eggs but it is possible—and natural—that the bird commenced sitting even on the 25th when the first egg was laid. Of this case Dr. Amsler says that the period of incubation was fourteen days. But how does he calculate it? We may assume from his account that the bird laid one egg each day on the 25th, 26th and 27th and that she began sitting on the 27th. He says the chick appeared on the 9th June. Leaving out the 9th June, the period of incubation, we get, is—from the 27th May to 8th June—thirteen days and not fourteen. Even this period cannot be definitely stated to be the incubation period for the egg that hatched out. Which egg was it that hatched out on the 9th June? Between 25th and 28th May four eggs were laid. The doctor does not appear to have marked the eggs as each was laid, which alone would have ensured accurate calculation. Who can say that the chick in the above case did not come out of the fourth egg which was laid on the 28th? In that case the period of incubation would become twelve days.

Let us now consider one of those cases in which the period of incubation was ten days according to Dr. Amsler. That was the period for the second and third nests. This is what he says of the third nest. “On July 31st, the hen was again sitting on three eggs, which all hatched out on August 11th and 12th.” The very fact that they were hatched out on different dates shows that their incubation also began on different days, otherwise they would have come out on the same day. This point escaped his notice. In the above case, evidently he counts the first ten days of August and puts that period down as the incubation period. But why should he leave out the 31st July when, he says, the bird began to sit? Does not incubation begin as soon as the bird begins sitting? And why should he leave out of count the 11th of August for the eggs from which the chick appeared on the 12th. The young which was hatched out on the 12th was incubated up to the 11th. From the 31st July to the 11th August it is twelve days. The eggs that were hatched on the 11th were incubated up to the 10th; the period would be, from the 31st July, eleven days. Yet Dr. Amsler makes it out to be 10 days! Certainly, this sort of calculation is defective, if not arbitrary.

I shall now give my own observations. A pair of White-eared Bulbuls (*Molpastes leucotis*), in my aviary, nested four times. Their first clutch consisted of three eggs on which the hen sat and sat for three weeks when I removed them

and found them to be clear ones. Immediately after, they built another nest in quite a large basket, full of straw which I had hung up for the use of a pair of White Doves. In this straw the Bulbuls inserted a very neat and compact cup of coir-fibres. I might mention, *en passant*, that they were not at all shy at this time and quite frequently came close to me to take the coir-fibres which I would throw to them, sometimes even accepting them from my hands. Between the 18th and 20th April the hen laid three eggs, one on each day. On the 30th April, I looked in but found no young. On the 1st May I could not inspect the aviary. On the 2nd I discovered two chicks. The egg laid on the 18th proved to be clear. The egg laid on the 19th probably hatched out on the 1st May—the day when I failed to look in, and the egg laid on the 20th hatched out on the 2nd. This makes the period of incubation 12 days. That this is the period of incubation is more convincingly proved by the more accurately kept records of the subsequent two nests which I give below. Of the next two nests I kept exact records, and the reader will find a remarkable coincidence in their dates. I should mention here that I missed the nestlings of the second nest a few days after their birth.

After repairing the same nest, the hen again laid an egg on the 17th June. On the 18th there was another and on the 19th yet another. No more eggs were laid. On the 29th June the first young hatched. Another young came out on the next day and the third egg became addled. Here the period of incubation was exactly twelve days. Going into the aviary one morning, I found a cock Dhayal most enthusiastically trying to breakfast on a young Bulbul. My entrance drove him off and I took up the half-dead thing to restore it to its nest, which I found to be empty. On looking round I discovered the other chick in a corner, pecked out of life. The cause of the disappearance of the first batch of Bulbul nestlings now became apparent to me and I removed the Dhayals to another compartment. It was well that I did so, for the next batch of nestlings lived and thrived and are now quite a healthy and lively pair of inmates of my aviary.

After the above disaster, the Bulbuls left the basket and built a nest in a German Roller Canary cage. On the 17th July, the first egg of the fourth clutch was laid. On the 18th there was a second and on the 19th a third. Again on the 29th the first egg hatched out. Two other nestlings followed consecutively on the next two days. A comparison of the dates of the last nest and this one reveals a remarkable coincidence. The third and the fourth nest, therefore, definitely settle for us the period of incubation. According to Dr. Amsler the period was 14 days in two instances and 10 in the other two of the four nests made by the same pair of birds. In the case of my birds I found no variation on three successive occasions. Dr. Amsler's bird laid four eggs on three occasions and three on one. But my bird kept on to three eggs every time.

Now I shall cite an example from Nature. In my country-house at Agarpara seven miles from Calcutta, I discovered, in a bush, a nest of the Bengal Red-Whiskered Bulbul (*Otocompsa emeria*) on the 15th April last, with one egg in it. On the 17th, there were three eggs in it. On the 28th April there were three nestlings in it. Counting from the date the last egg was laid—the 17th—to the date when the last young appeared (the 28th) the period of incubation is eleven days, a day less than the time required by the birds in my aviary. But I must mention that at this time a heat-wave was passing over the country, the maximum temperature recorded in the shade having been 106°F. The normal period, of incubation for the eggs of Bulbuls is, according to my observations, *twelve* days.

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CALCUTTA, 5th January 1924.